



Australian Bureau of Statistics

Education Services

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Resources



GEO 07 – Population Structure: Construction of Population Pyramids

You can download this activity as a rich text file (RTF) using the links at the bottom of the page.

Subject Area

Geography

Suggested Level

Years 9–10

Overview

This activity studies the concept of population structure through the creation of a population pyramid for the Indigenous population of Australia. The pyramid may be drawn on paper or constructed interactively using a computer. Students are guided in how to describe the shape of a population pyramid. Comparison is made between the shape of the Indigenous pyramid and the pyramids for Australia's states and territories.

Requirements

- Computer
- Internet connection
- Calculator
- To view the dynamic population pyramids on the ABS website you will need an Adobe SVG viewer to be installed on your computer

Instructions

6.1 Size of Population

Begin the activity by asking students to guess the size of Australia's population and how many people are added each day to the population. Compare the estimates with the values provided on Australia's Population Clock by visiting the website. Discuss the changes to Australia's population using the statistics provided beneath the population clock.

6.2 Structure of Australia's Population

Population structure refers to the composition of the population by age and sex. The characteristics of the population structure may be illustrated through the use of a population pyramid. To view examples go to Animated Population Pyramids.

1. Ask students to collect statistics about their own age group from the animated Australian population pyramid. Enter data for both the current year and the year 2050. Record the data in a table similar to Table 1 below.

TABLE 1. STATISTICS ABOUT MY AGE GROUP		
	Current Year	2050
My age		
Number of Males of my age		
Number of Females of my age		
Total population in my age group		
Sex ratio for my age group		
Total Population of Australia		

2. Discuss the changes identified by the students when completing this activity.

6.3 Construction of a Population Pyramid

1. Prior to construction of the population pyramid, ask students to complete Table 2.

2. When the table is complete, construct a population pyramid for Australia's Indigenous population using Table 2 and one of the templates provided at the end of the activity. The interactive template in MS Excel format enables students to enter data on line and watch the pyramid develop. Students may copy and paste the completed pyramid by using the 'Print friendly worksheet'. Alternatively, use the paper version provided.

TABLE 2: AGE BY SEX FOR INDIGENOUS PERSONS 2006 CENSUS OF POPULATION AND HOUSING AUSTRALIA					
	Males	% Persons	Females	% Persons	Persons
0-4 years	28 273	6.2	27 306	6.0	55 579

5-9 years	29 611	6.5	28 353		
10-14 years	29 502		28 088	6.2	57 590
15-19 years	24 883	5.5	23 626		48 509
20-24 years	18 660	4.1	18 849	4.1	37 509
25-29 years	14 923		15 899	3.5	
30-34 years	14 992	3.3	16 475	3.6	31 467
35-39 years	14 393	3.2	16 480		30 873
40-44 years	12 631	2.8	14 249	3.1	26 880
45-49 years	10 686		11 845	2.6	22 531
50-54 years	8 601	1.9	9 380	2.1	
55-59 years	6 261		6 945	1.5	13 206
60-64 years	4 228	0.9	4 747		8 975
65 years and over	6 423	1.4	8 707	1.9	15 130
Total	224 067	49.2	230 949	50.8	455017

Source: 2006 Census Community Profile Series: Indigenous Profile

3. Ask the students to describe the shape of the population pyramid for Indigenous Australians using the following as guidelines: width of base, width of top, shape of the sides, height of the graph, proportion of males and females. Students should support their writing with statistics taken from the pyramid or the data provided.

6.4 A comparison of Population Pyramids

1. Divide the class into groups of eight students. Allocate one state or territory within Australia to each student in the group. Provide a worksheet consisting of a page subdivided into eight small boxes. Rule a vertical and horizontal axis in each small box and give each box the name of a state or territory (see website for attachment GEO_07_Worksheet). Access to one or more computers is required to complete this activity.

2. Ask the students to find the animated population pyramid for their given state or territory and to create a thumbnail sketch of its shape for the current year.

3. Students return to their groups and share their results by copying the shape of the pyramid for each state onto the worksheet.

Note: The shape of the population pyramid is the focus of this activity. The horizontal scale varies with the size of population in each state. This should be noted when making the comparison between states.

4. Compare the shape of the Indigenous population pyramid with those of Australian states and territories. Which state or territory most closely matches the shape of the Indigenous population pyramid?

5. Discuss the reasons that explain the shape of the Indigenous population pyramid.

Extension

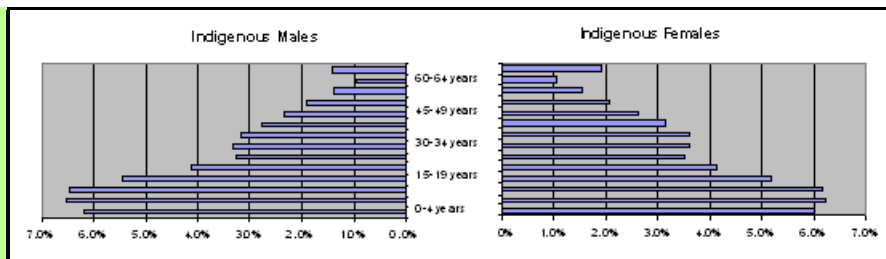
The size of population is different in each state and territory and this needs to be taken into account when making comparisons between the states and territories.

1. The activity could be extended by constructing two worksheets. In version 1 the scale varies with the size of the state population (as it does with the animated population pyramids). In version 2, the scale on the horizontal axis is the same for each state and territory.
2. Discuss the reasons for the variation in the shapes of the population pyramids for the Australian states and territories.

Answers

TABLE 2: AGE BY SEX FOR INDIGENOUS PERSONS 2006 CENSUS OF POPULATION AND HOUSING AUSTRALIA					
	Males	% Persons	Females	% Persons	Persons
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30-34 years	14 992	3.3	16 475	3.6	31 467
35-39 years	14 393	3.2	16 480	3.6	30 873
40-44 years	12 631	2.8	14 249	3.1	26 880
45-49 years	10 686	2.3	11 845	2.6	22 531
50-54 years	8 601	1.9	9 380	2.1	17 981
55-59 years	6 261	1.4	6 945	1.5	13 206
60-64 years	4 228	0.9	4 747	1.0	8 975
65 years and over	6 423	1.4	8 707	1.9	15 130
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FIGURE 1: INDIGENOUS POPULATION PYRAMID



References

(Note: Links to ABS publications are to the most recent release. Previous releases can be accessed by selecting the 'Past & Future Releases' tab)

[Australian Bureau of Statistics Population Clock](#)

[Australian Bureau of Statistics SVG Viewer](#)

Download the Activity

Student Activity



[Geo_07 Population Structure-Construction of Pop Pyramids_Studentworksheet.rtf](#)

Teacher Solutions



[Geo_07 Population Structure-Construction of Pop Pyramids_Teacher Answer Sheet.rtf](#)

Marking Rubric



[Geo_07 Pop Structure Rubric.rtf](#)

Attachments



[Geo_07_Indigenous_pyramid.xls](#)



[Geo_07_Pop Structure_diagram_pyramid.pdf](#)



[Geo_07_Population Structure- Sketchpyramids.pdf](#)

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